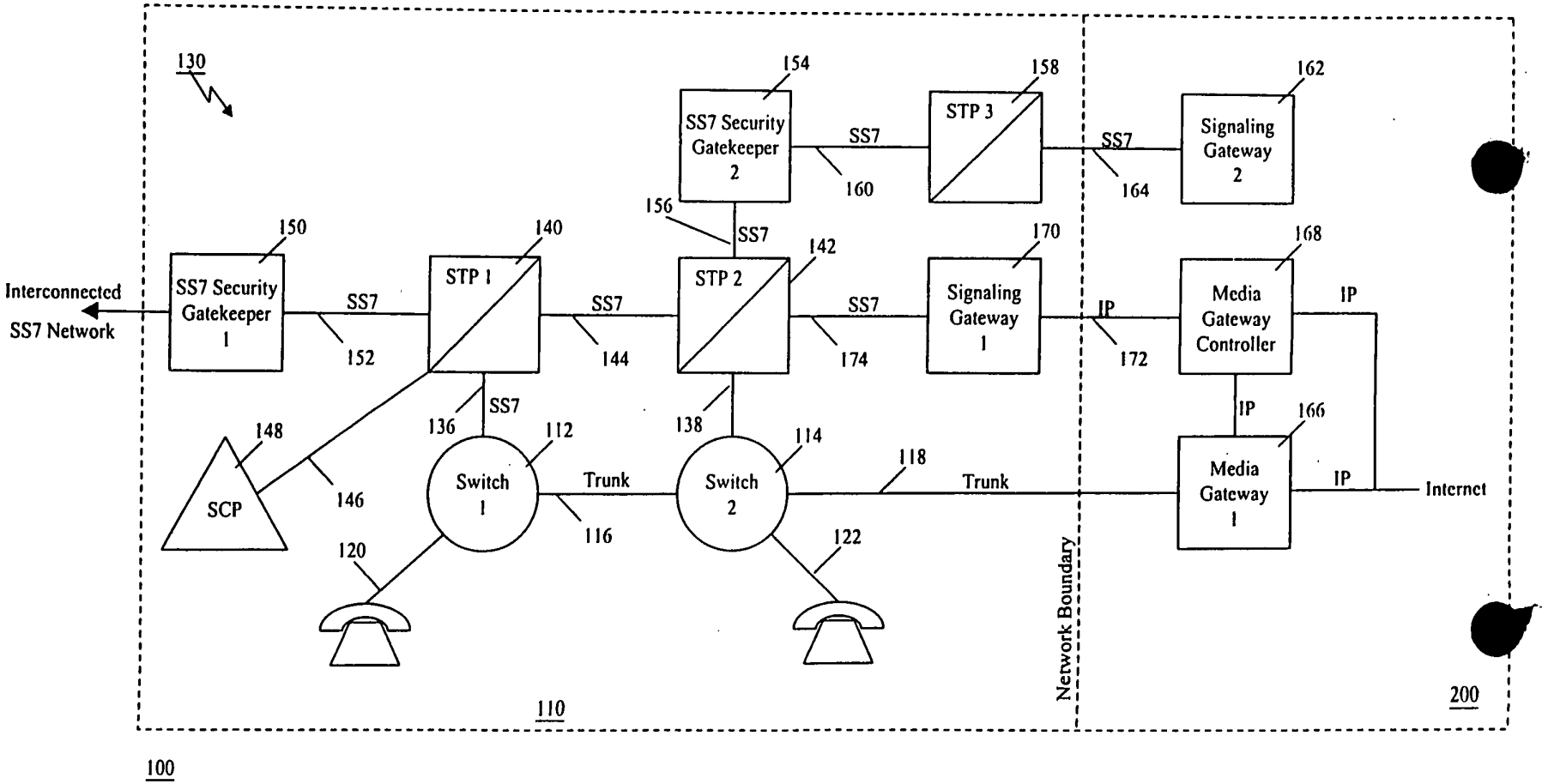

130
154
158
162
SS7 Security Gatekeeper 2
SS7
STP 3
SS7
Signaling Gateway 2
160
164
156
SS7
150
140
142
170
168
Interconnected SS7 Network
SS7 Security Gatekeeper 1
SS7
STP 1
SS7
STP 2
SS7
Signaling Gateway 1
IP
Media Gateway Controller
IP
152
144
174
172
136
SS7
138
IP
166
148
112
114
118
SCP
146
Switch 1
Trunk
Switch 2
Trunk
Media Gateway 1
IP
Internet
116
120
122
Network Boundary
110
200
100

Figure 1

TOSO20"226T8260

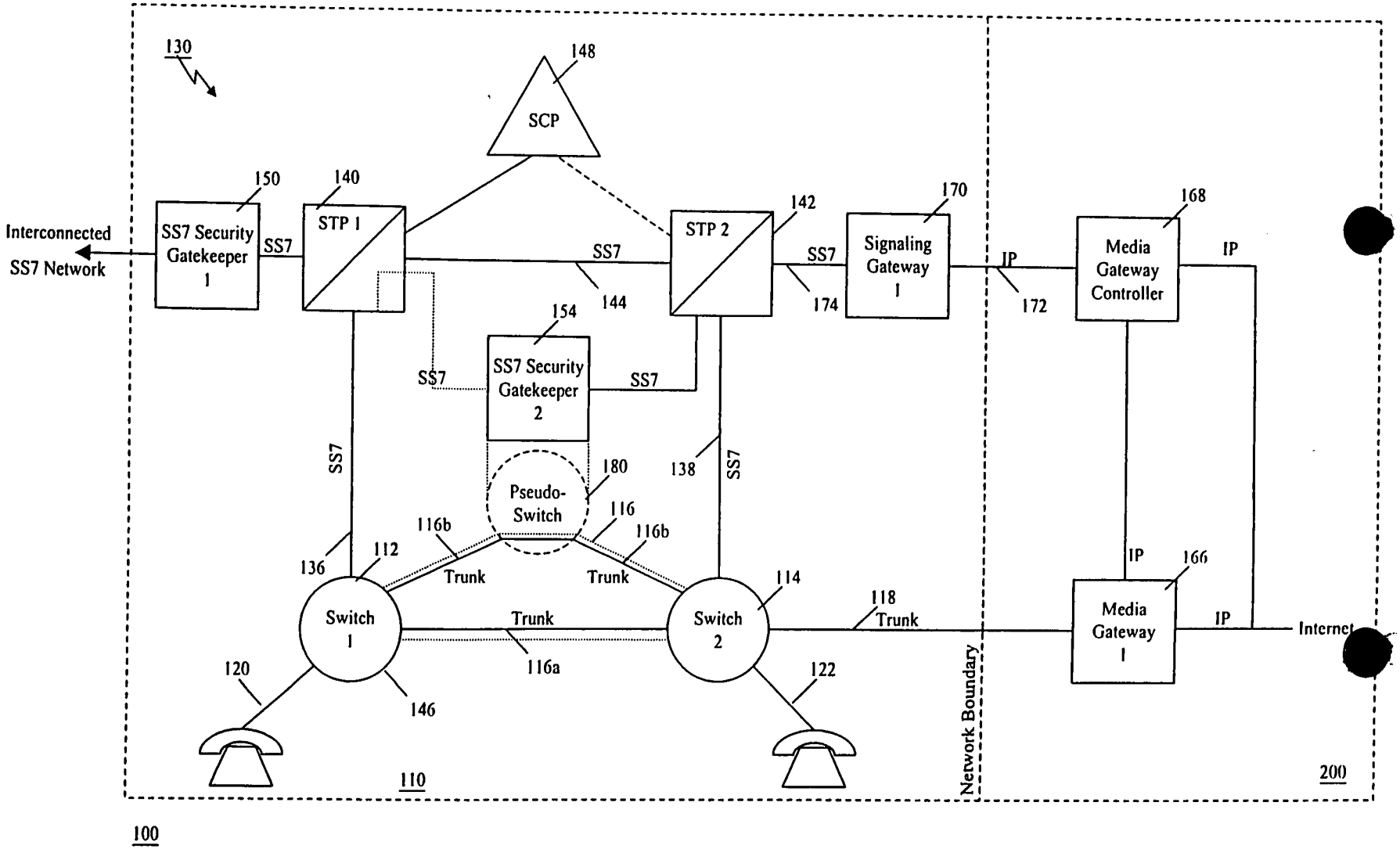


Figure 2

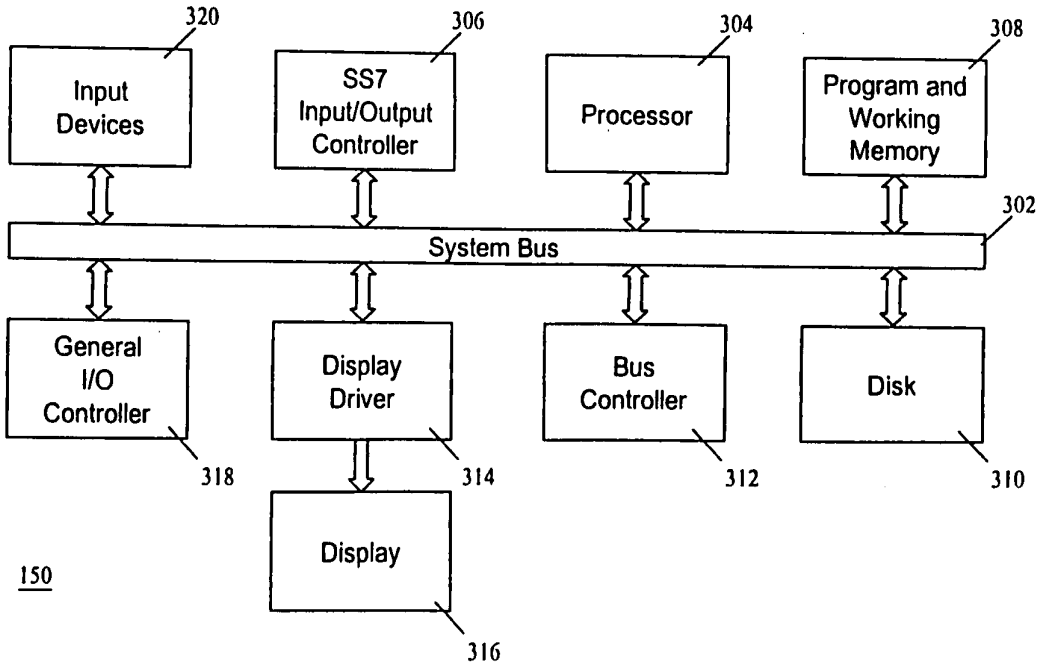
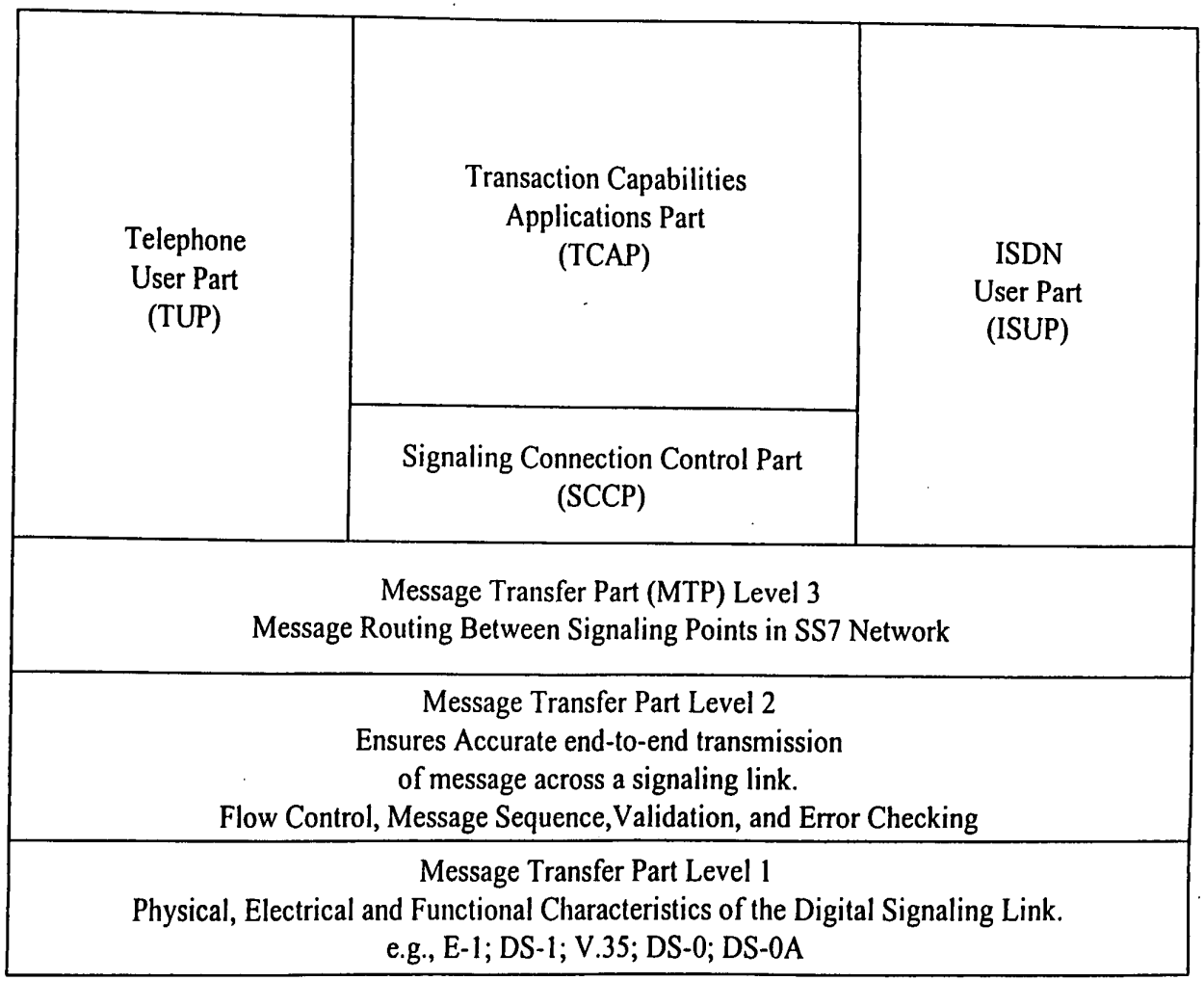

320
306
304
308
Input Devices
SS7 Input/Output Controller
Processor
Program and Working Memory
302
System Bus
General I/O Controller
Display Driver
Bus Controller
Disk
318
314
312
310
Display
316
150

Figure 3



SS7 Protocol Stack

Figure 4

T05020"2267826D

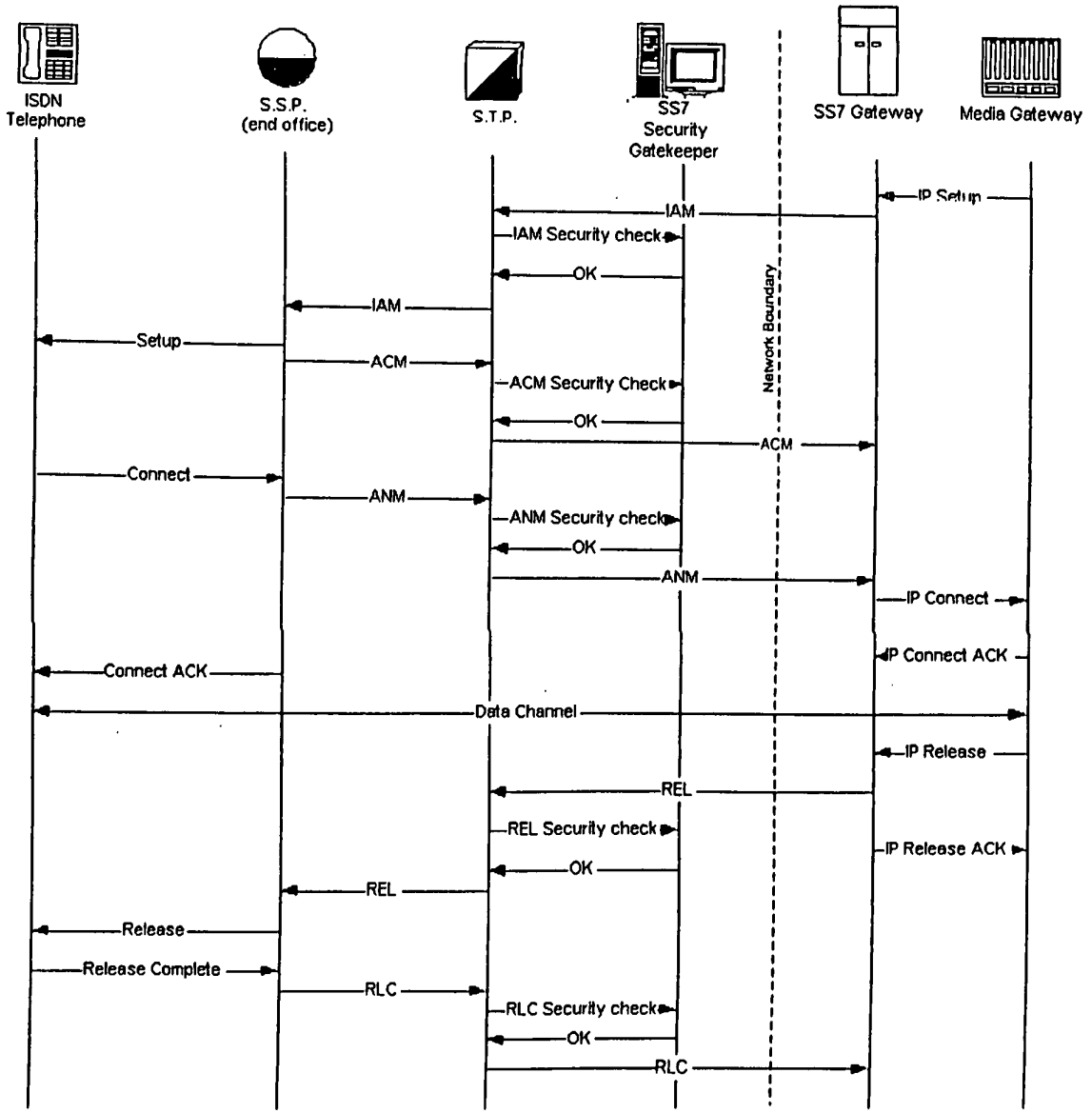


Figure 5

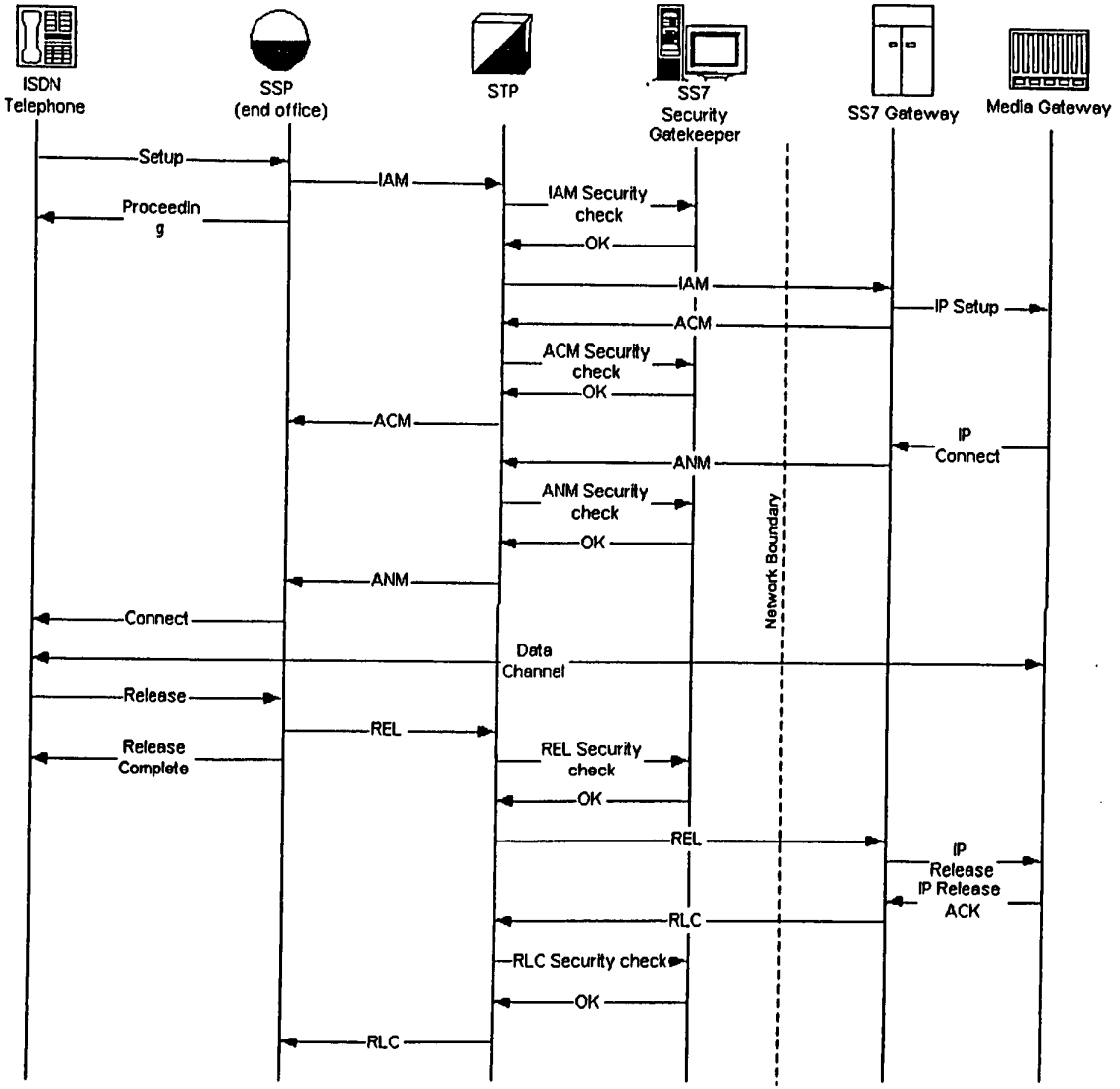

ISDN Telephone
SSP (end office)
STP
SS7 Security Gatekeeper
SS7 Gateway
Media Gateway
Setup
IAM
IAM Security check
Proceeding
OK
IAM
IP Setup
ACM
ACM Security check
OK
ACM
IP Connect
ANM
ANM Security check
OK
Network Boundary
ANM
Connect
Data Channel
Release
REL
Release Complete
REL Security check
OK
REL
IP Release
IP Release ACK
RLC
RLC Security check
OK
RLC

Figure 6

T05020" 226T8760

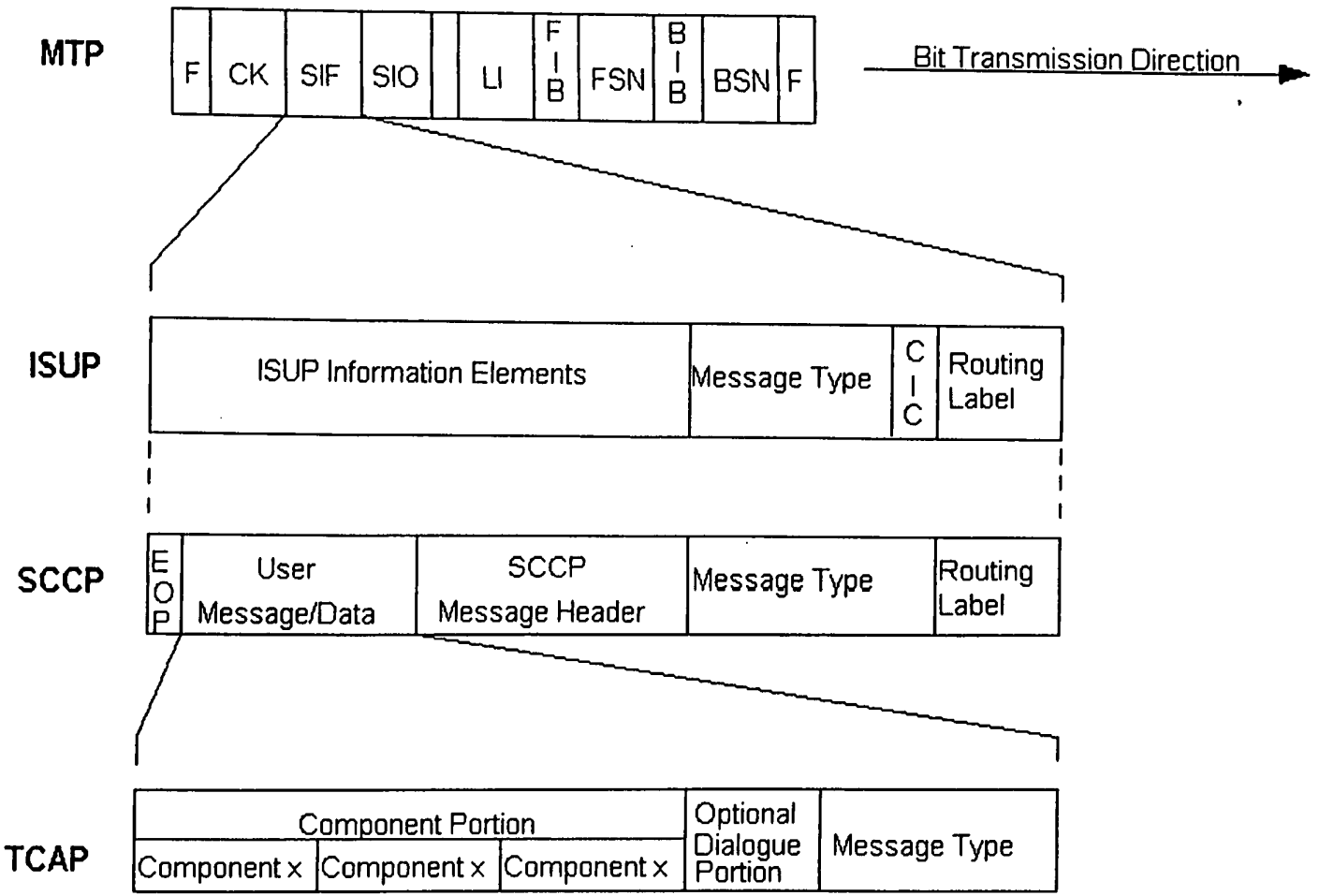


Figure 7

ISDN User Part Message Format Coding
(LSSGR GR-606, Iss. 3 11/99)

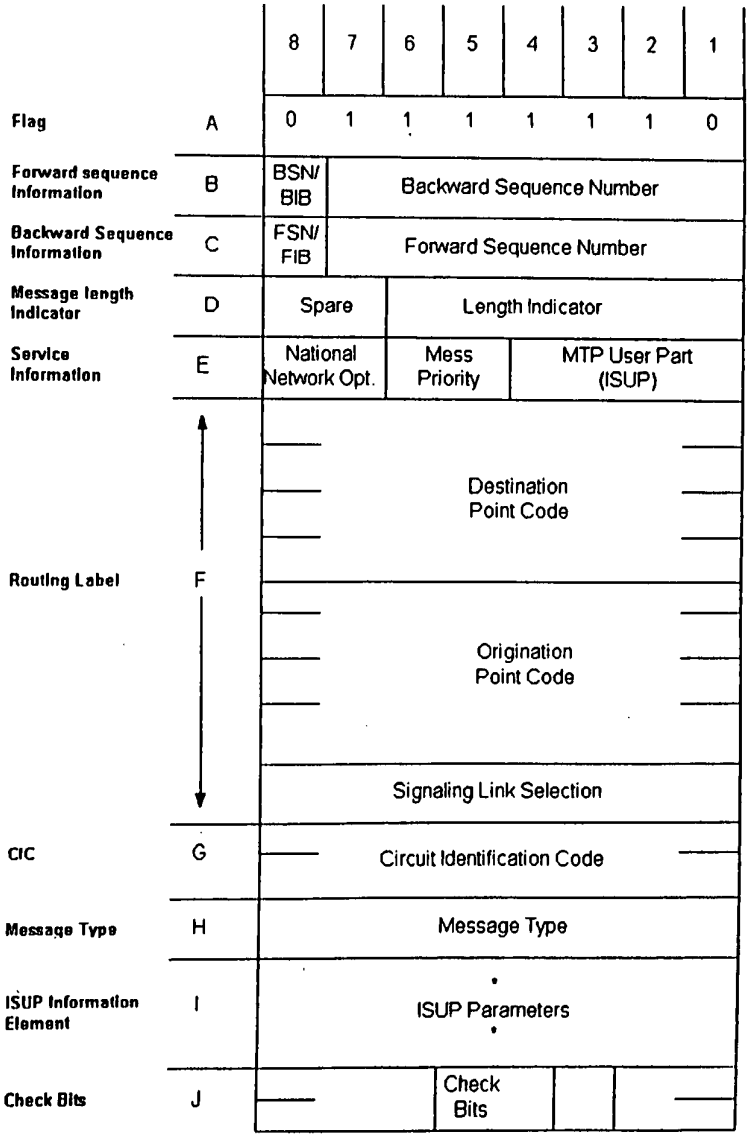


Figure 8

TOS020 "22678260

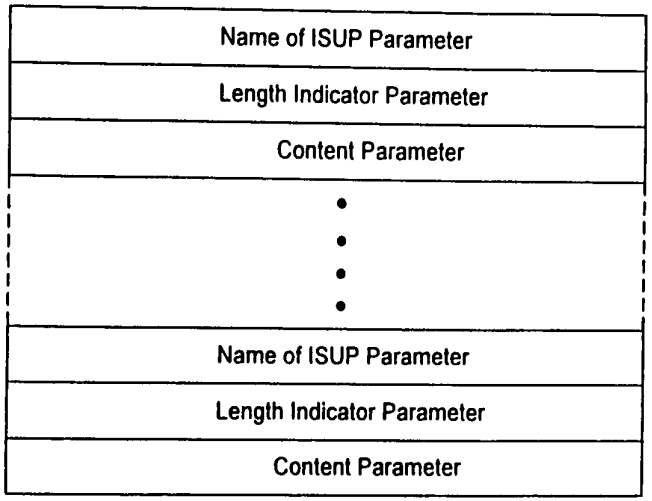


Figure 9

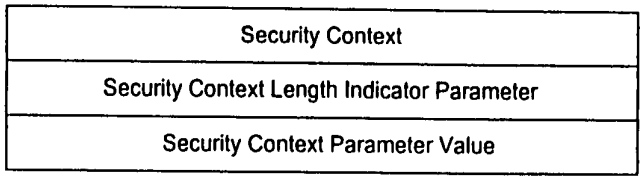


Figure 10

Security Context Values

Value	Meaning
0	Not used.
1	Data Encryption Algorithm
2	Integrity Check
3	Message Code Authentication
4	Sequence, Timestamp and Identification

Figure 11

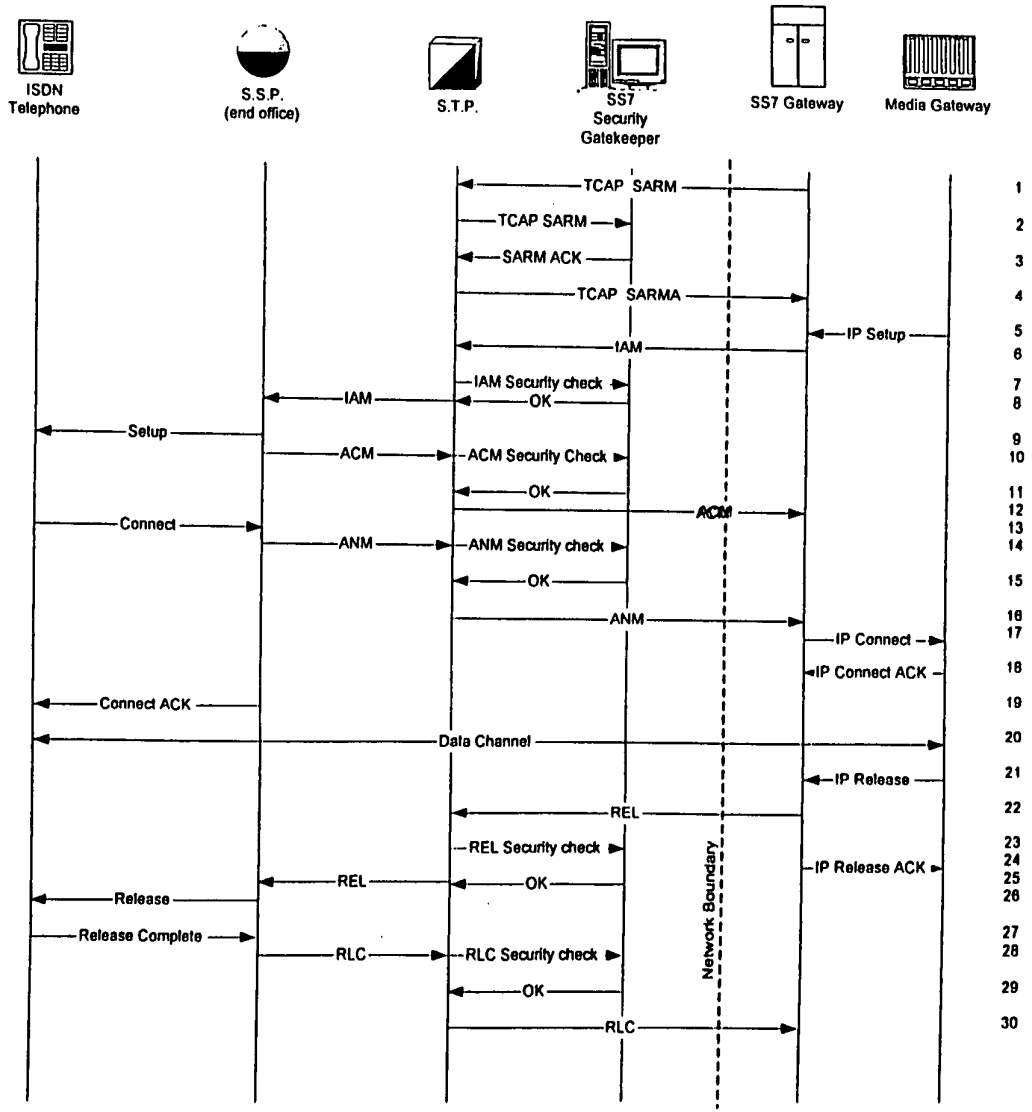

ISDN Telephone
S.S.P. (end office)
S.T.P.
SS7 Security Gatekeeper
SS7 Gateway
Media Gateway
TCAP SARM
TCAP SARM
SARM ACK
TCAP SARMA
IP Setup
IAM
IAM Security check
IAM
OK
Setup
ACM
ACM Security Check
OK
ACM
Connect
ANM
ANM Security check
OK
ANM
IP Connect
IP Connect ACK
Connect ACK
Data Channel
IP Release
REL
REL Security check
IP Release ACK
REL
OK
Release
Release Complete
RLC
RLC Security check
OK
RLC
Network Boundary
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

Figure 12

TOSO20"2267826O

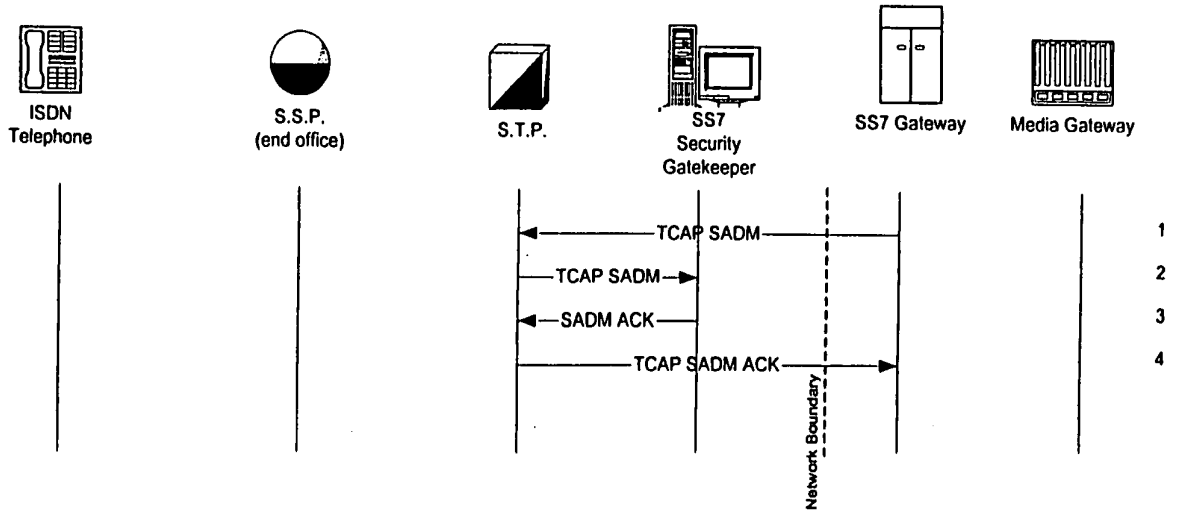


Figure 13

SIO and Routing Label	
CIC Low-Order Octet	
2-bits spare	CIC High-Order 6-bits
Message Type = 1	
Nature of Connection Indicators	
Forward Call Indicator Bits H..A	
Forward Call Indicator Bits P..I	
Calling Party Category	
Offset of 1st Mandatory Var. Parameter	
Offset of 2nd Mandatory Var. Parameter	
Offset of Start of Operational Part	
Length Indicator of User Service Info	
User Service Information No. of Octets = Length Indicator Value	
Length Indicator of Called Party No.	
Called Party Number No. of Octets = Length Indicator Value	
Optional Parameter Code	
Optional Parameter Length Indicator	
Optional Parameter No. of Octets = Length Indicator Value	
End of Optional Parameters Indicator	

Fig. 14

SIO and Routing Label	
CIC Low-Order Octet	
2-bits spare	CIC High-Order 6-bits
Message Type = 6	
Backward Call Indicator Bits H..A	
Backward Call Indicator Bits P..I	
Offset to Start of Optional Part	
Optional Parameter Code	
Optional Parameter Length Indicator	
Optional Parameter No. of Octets = Length Indicator Value	
End of Optional Parameters Indicator	

Fig. 15

SIO and Routing Label	
CIC Low-Order Octet	
2-bits spare	CIC High-Order 6-bits
Message Type = 9	
Offset to Start of Optional Part	
Optional Parameter Code	
Optional Parameter Length Indicator	
Optional Parameter No. of Octets = Length Indicator Value	
End of Optional Parameters Indicator	

Fig. 16

SIO and Routing Label	
CIC Low-Order Octet	
2-bits spare	CIC High-Order 6-bits
Message Type = 12	
Offset of 1st Mandatory Var. Parameter	
Offset of Start of Operational Part	
Length Indicator of Cause Indicators	
Release Cause Indicator Parameter No. of Octets = Length Indicator Value	
Optional Parameter Code	
Optional Parameter Length Indicator	
Optional Parameter No. of Octets = Length Indicator Value	
End of Optional Parameters Indicator	

Fig 17

SIO and Routing Label	
CIC Low-Order Octet	
2-bits spare	CIC High-Order 6-bits
Message Type = 16	

Fig. 18

T05020 "2267826

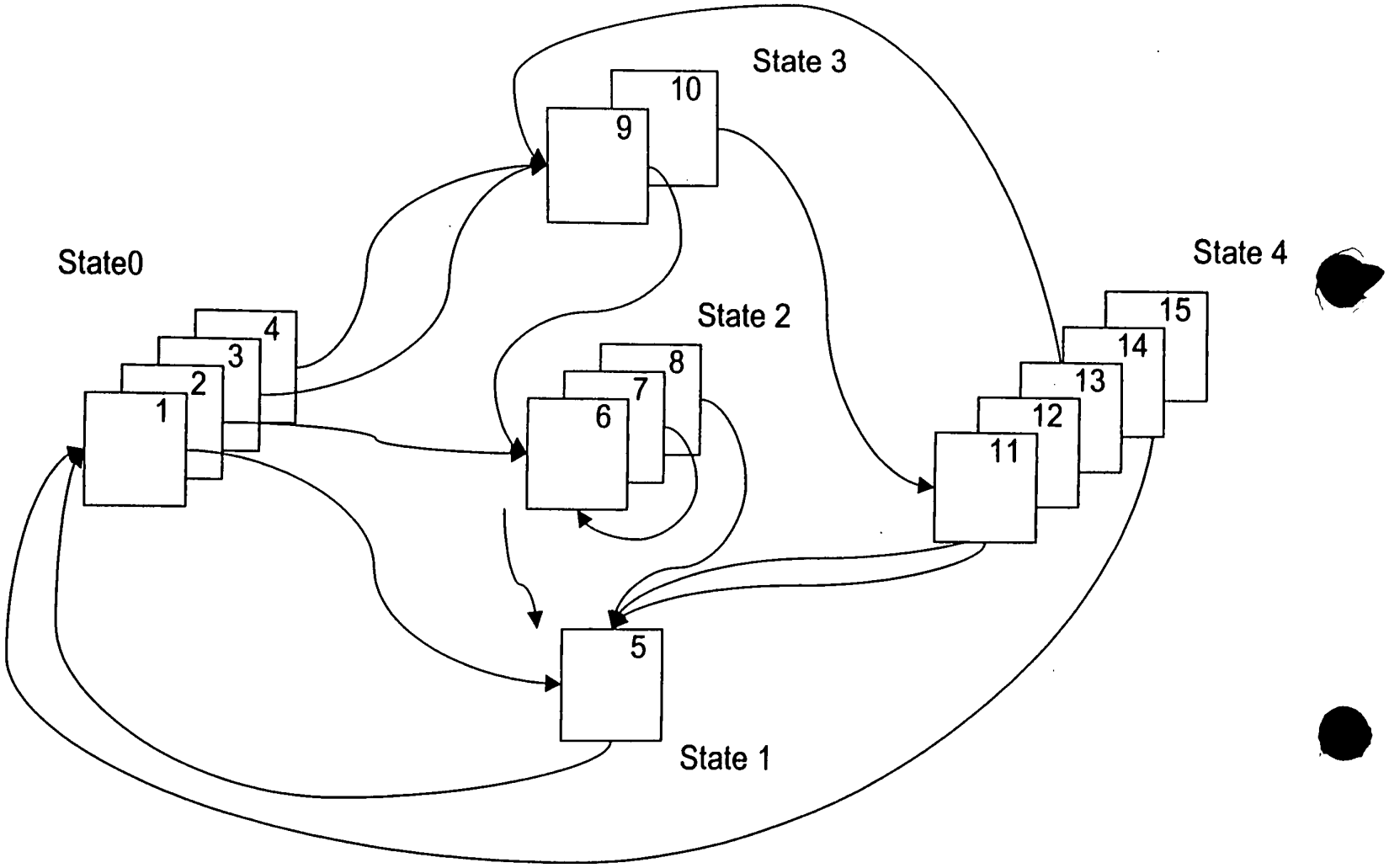


Fig. 19